

Patent Claims:

1. Die head for an extruder, comprised of an outer shell, an inner cylindrical mandrel, an annular die gap at a discharge side, at least one intake opening for the melted mass, at least one distribution element for distributing the melted mass to a central ring channel terminating in the die gap, characterized in that the distribution element (6) and/or an inflow channel (16) are formed such that the distribution element (6) is set into torsional motion around the longitudinal axis of the mandrel (4) due to the inflowing melted mass, and that the flow of melted mass is routed to the central ring channel.
2. Die head according to claim 1, characterized in that the distribution element (6) and/or an inflow channel (16) are formed such that a tangential flow of the melted mass on a peripheral surface of the distribution element (6) occurs.
3. Die head according to claim 1 or 2, characterized in that the distribution element (6) includes a plurality of lamellae (11) interspersed with orifices such that an action of force occurs due to the flow of the melted mass.
4. Die head according to claims 1 to 3, characterized in that the orifices (7) are oriented such that an imaginary extension of the direction of the melt flow at the exit of the orifice runs at a distance to the centerline of the mandrel (4).
5. Die head according to one of claims 1 to 4, characterized in that the orifices (7) are oriented such that the melted mass is re-routed around an obtuse angle (β) at the entry of the orifices so that the drag and thrusting moments, which move in the same rotational direction (25), add up to a total torque.
6. Die head according to one of claims 1 to 5, characterized in that at the peripheral surface where the tangential flow occurs, the distribution element (6) has a relatively large effective surface for transmitting the force of the tangentially inflowing viscous melted mass.

7. Die head according to one of claims 1 to 6, characterized in that the height (h) of the inflow channel (16) increases in the flow direction of the melted mass.
8. Die head according to one of claims 1 to 7, characterized in that the lamellae (11) are pointed or rounded in the flow direction of the melted mass.
9. Die head according to one of claims 1 to 8, characterized in that one end of a first inflow channel (16) is arranged close to a succeeding inflow channel (16').
10. Die head according to one of claims 1 to 9, characterized in that in an inner ring surface (11), the distribution element (6) is beveled and/or rounded.
11. Die head according to one of claims 1 to 10, characterized in that the lamellae (11) and/or the orifices on opposing face sides (150, 151) of the distribution element (6) are respectively arranged in a staggered array.
12. Die head according to one of claims 1 to 11, characterized in that the shell (2) is formed by a plurality of shell segments (2'), each having a dedicated distribution element (6), and that the shell segments (2') are stacked on top of each other around the distribution elements (6), and that each shell segment (2') has at least one dedicated inflow channel (16).
13. Die head according to one of claims 1 to 12, characterized in that the distribution element (36, 38, 40) is arranged in an annular hollow space (34, 35, 37, 39).
14. Die head according to one of claims 1 to 13, characterized in that the distribution element (6) is a circular ring element.
15. Die head according to one of claims 1 to 14, characterized in that the distribution element (6) is arranged in a torpedo-shaped or conical displacement body (202), whereby the melted mass collides with the tip of the displacement

body, and the flow of melted mass is circularly distributed.

16. Die head according to one of claims 1 to 15, characterized in that the peripheral surface of the distribution element, where the tangential flow occurs, is an outer peripheral surface of said distribution element.

17. Die head according to one of claims 1 to 16, characterized in that the peripheral surface of the distribution element, where the tangential flow occurs, is an inner peripheral surface of said distribution element.

18. Die head according to one of claims 1 to 17, characterized in that the distribution element (6) includes a plurality of lamellae (11) interspersed with orifices arranged such that an action of force occurs at the exit of the orifices due to a material expansion of the melted mass.